MES College of Engineering

Kuttippuram,Thrikkanapuram
PO,Malappuram District,Kerala - 679573

LAB PRACTICAL EXAM - I (BATCH - II)

Roll Nos. 32 to 61

Program : MCA, MCA 2023-24 Sem : S2

Course Code: 20MCA134 Duration : 3 Hrs

Course Name: Advanced DBMS Lab Max Mark : 20.00

QUESTIONS

1. **Question 1:**

Create a table ***faculty*** in MySQL database with the following schema and constraints: (**4 Marks**)

faculty (fno, fname, doj, specialization)

fno (faculty number) is an integer attribute. ***fname*** (faculty name) is a variable length character attribute, with a maximum size of 15. ***doj*** (faculty joining date) is a date attribute and should not be empty. ***specialization*** (faculty specialization) is a variable length character attribute with a maximum size of 50.

Constraints to set for the table ***faculty***:

1. *fno* is the primary key and must be an auto incrementing attribute
2. *fname* should not be empty.
3. *doj* should not be empty and must be greater than January 01, 2000.

Question 2:

Create a table ***subject*** in MySQL database with the following schema and constraints: (**4 Marks**)

subject (sname, sdate, edate, roomno, fno)

sname (subject name) is a variable length character attribute with a maximum size of 50. ***sdate*** (start date of teaching a subject) is a date attribute. ***edate*** (end date of teaching a subject) is a date attribute. ***roomno*** (room number where the subject is taught) must be of a fixed length character attribute with a size of 4.
fno (faculty number) is an integer attribute.

Constraints to set for the table ***subject***:

1. *sname* and *sdate* together form the primary key.
2. *sname* should not be empty.
3. *sdate* shoud not be empty.
4. *edate* shoud not be empty.
5. *roomno* should not be empty.
6. *fno* is the foreign key attribute that referes to *fno* attribute of faculty table.

Question 3:

Insert the following records to the table ***faculty***: (**2 Marks**)

- (1, John Doe, 2020-01-15, Computer Science)
- (2, Jane Smith, 2018-05-20, Mathematics)
- (3, Alice Johnson, 2019-09-10, Physics)
- (4, Bob William, 2021-03-25, Chemistry)
- (5, Emily Brown, 2017-11-08, Biology)
- (6, Michael Green, 2020-08-10, Economics)

Question 4:

Insert the following records to the table ***subject***: (**2 Marks**)

- (Introduction to Programming, 2024-01-10, 2024-05-10, C101, 1)
- (Linear Algebra, 2024-02-15, 2024-06-15, T102, 2)
- (Mechanics, 2024-06-20, 2024-10-20, T102, 2)
- (Mechanics, 2024-03-20, 2024-07-20, M103, 3)
- (Organic Chemistry, 2024-04-25, 2024-08-25, T104, 4)
- (Cell Biology, 2024-01-15, 2024-05-15, T105, 5)

Question 5:

Perform the following Queries: (**8 Marks**)

1. Retrieve all faculty members whose specialization includes the letter 'm' (include *fno* and *fname*)
2. List all faculties who have joined after April 01, 2024 (include *fno* and *fname*)
3. Find all faculty members who are teaching subjects starting after March 01, 2024 (include *fno* and *fname*)
4. List subjects along with the faculty name and their specialization, ordered by subject start date in ascending order (include *sname, fname, specialization*)
5. Find the subjects taught by the faculty member who joined most recently (include *fname*, *doj* and *sname*)
6. Find the faculty members who are not currently teaching any subject (include *only fname*)
7. List the subjects along with the number of faculty members teaching each subject (include *sname* and *num_faculty*)
8. Retrieve faculty names along with the count of subjects they are teaching, ordered by the count of subjects in descending order (include *fname* and *subject_count*)

[Mark : 20] (CO : CO1 , CO2)

(Blooms Level : 2)